

BOOK REVIEW

Semple, John C. 1996. *A Revision of Heterotheca sect. Phyllothea (Nutt.) Harms (Compositae: Astereae): The Prairie and Montane Goldenasters of North America*. University of Waterloo Biology Series No. 37. 164 pp., illus. \$15.00 plus \$5.00 shipping and handling (paper). Published by U. W. Biology Series, Department of Biology, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1.

The goldenasters (golden asters) and camphorweeds are yellow-flowered, summer and fall-blooming, annual and perennial herbs ranging in eastern North America from the Massachusetts coastal plain south into Texas and in the west from Canada to southern Mexico. Their generic circumscriptions have been “in turmoil” (Semple’s phrase) since the early 1950s. Thus the only somewhat widespread New England species, *Chrysopsis falcata* (Pursh) Ell. in the great mid-century floras of the region, became for a time *Heterotheca falcata* (Pursh) Harms and is now *Pityopsis falcata* (Pursh) Nutt., a name it will seemingly retain in *Flora North America*. This very well done monograph would be useful alone for its introductory sections expounding the nomenclatural history of this complex group.

According to Semple, most North American goldenasters are divided among *Chrysopsis* (9 species), *Heterotheca* (28 species), and *Pityopsis* (7 species). *Pityopsis* and *Chrysopsis* are centered in the southeastern United States while *Heterotheca* is most abundant and diverse in the west. Within the United States, *Heterotheca* sect. *Phyllothea* occurs largely in the prairie and montane regions west of the Mississippi, although *H. camporum* (Greene) Shinnars var. *camporum* extends through the Prairie Peninsula region into western Indiana and *H. camporum* var. *glandulissimum* Semple has recently spread to a number of eastern sites.

Perhaps surprisingly, most of the twenty species in sect. *Phyllothea* and their varieties historically have been included within *Chrysopsis villosa* (Pursh) Nutt., characterized by H. A. Gleason in 1952 as “a complex and poorly understood aggregate species, of uncertain limits,” its often distinctive varieties “connected by numerous intergrades.” Semple, in revising the group, has taken on a daunting task, and at the very least has established a coherent system for a widespread and protean assemblage, with clear de-

scriptions of its taxa. His taxonomic treatment includes keys to the three sections and 28 species of *Heterotheca* and their varieties, a general summary of section *Phyllotheca*, and accounts of each of its species and varieties. Included are range maps in sufficient detail to delight the biogeographers among us and black and white illustrations showing growth habit, leaves, and, in very fine detail, the reproductive structures of each taxon. There are also lengthy lists of cited specimens and narrative discussions with notes on aberrant or atypical forms, potentially very useful information of a sort too quickly glossed over in broad floristic treatments. Semple warns the reader early-on that the taxa within *Phyllotheca* are defined by combinations of traits rather than by single diagnostic features and that within most species, leaf indument (often featured prominently within his keys) varies in a gradient from taxa possessing numerous hairs and few or no glands to closely related forms with few hairs and many glands. Indeed, within some specimens, the indument of the basal leaves may vary sharply from that of the upper leaves, reflecting different environmental conditions at the time of leaf formation.

Thus, I suspect that despite Dr. Semple's efforts, because of its inherent variability, section *Phyllotheca* will continue to present difficulties for field biologists. Hence, whether or not his treatment, which proposes six new names and combinations within section *Phyllotheca* alone, will survive the inevitable revisions of the 21st Century, is very much an open question. If his structure is in time dismantled, he has nonetheless brought together here the building blocks to shape another.

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